# IN THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF TEXAS

**HOUSTON DIVISION** 

Neuro and Cardiac Technologies, LLC,	
Plaintiff,	
v.	Civil Action No
LivaNova, Inc. and LivaNova USA, Inc.,	Jury Trial Demanded
Defendants.	

### ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Neuro and Cardiac Technologies, LLC files this Original Complaint for patent infringement against LivaNova, Inc. and LivaNova USA, Inc., alleging as follows:

## **NATURE OF THE SUIT**

1. This is a claim for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

## THE PARTIES

- 2. Plaintiff Neuro and Cardiac Technologies, LLC ("Plaintiff" or "Neuro-Cardiac") is a Delaware limited liability company with its principal place of business located at 4350 South 116th Street, Greenfield, Wisconsin 53228.
- 3. Defendant **LivaNova**, **Inc.** is a California corporation with a physical presence within this District located at 100 Cyberonics Blvd., Houston, Texas 77058. LivaNova, Inc. is registered to do business in Texas and may be served via its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3136.

- 4. Defendant **LivaNova USA**, **Inc.** is a Delaware corporation with a physical presence within this District located at 100 Cyberonics Blvd., Houston, Texas 77058. LivaNova, Inc. is registered to do business in Texas and may be served via its registered agent, National Registered Agents, Inc., 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3136.
- 5. Unless otherwise noted, Defendants LivaNova, Inc. and LivaNova USA, Inc. are hereinafter collectively referred to as "**Defendants**" or "**LivaNova**".

# **JURISDICTION AND VENUE**

- 6. This action arises under the patent laws of the United States, 35 U.S.C. § 101, *et seq.* This Court's jurisdiction over this action is proper under the above statutes, including 35 U.S.C. § 271, *et seq.*, 28 U.S.C. § 1331 (federal question jurisdiction), and § 1338 (jurisdiction over patent actions).
- 7. LivaNova is subject to personal jurisdiction in this Court. In particular, this Court has personal jurisdiction over LivaNova because LivaNova has engaged in continuous, systematic, and substantial activities within this State, including substantial marketing and sales of products within this State and this District. Furthermore, upon information and belief, this Court has personal jurisdiction over LivaNova because LivaNova has committed acts giving rise to Neuro-Cardiac's claims for patent infringement within and directed to this District.
- 8. Upon information and belief, LivaNova has committed acts of infringement in this District and has one or more regular and established places of business within this District under the language of 28 U.S.C. § 1400(b). Thus, venue is proper in this District under 28 U.S.C. § 1400(b).
- 9. LivaNova maintains a permanent physical presence within the Southern District of Texas, conducting business from at least its location at 100 Cyberonics Blvd., Houston, Texas 77058.

10. Upon information and belief, LivaNova has conducted and does conduct substantial business in this forum, directly and/or through subsidiaries, agents, representatives, or intermediaries, such substantial business including but not limited to: (i) at least a portion of the infringements alleged herein; (ii) purposefully and voluntarily placing one or more infringing products into the stream of commerce with the expectation that they will be purchased by consumers in this forum; or (iii) regularly doing or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services provided to individuals in Texas and in this judicial district. Thus, LivaNova is subject to this Court's specific and general personal jurisdiction pursuant to due process and the Texas Long Arm Statute. Venue is proper in the Southern District of Texas pursuant to 28 U.S.C. § 1391 and 28 U.S.C. § 1400(b).

# THE PATENT AT ISSUE

- 11. Mr. Birinder R. Boveja and Ms. Angely Widhany are prolific inventors, with Mr. Boveja named as an inventor on over 30 issued United States Patents and Ms. Widhany named as an inventor on at least 19.
- 12. This cause of action asserts infringement of United States Patent No. 7,076,307 ("the '307 Patent").
- 13. The '307 Patent, entitled "Method and System for Modulating the Vagus Nerve (10th Cranial Nerve) with Electrical Pulses Using Implanted and External Components, To Provide Therapy Neurological and Neuropsychiatric Disorders," duly and legally issued on July 11, 2006, from U.S. Patent Application No. 10/841,995, filed on May 8, 2004, naming as inventors Mr. Boveja and Ms. Widhany. A true and correct copy of the '307 Patent is attached hereto as **Exhibit A** and is incorporated by reference.

- 14. The '307 Patent is a continuation-in-part of U.S. Patent Application No. 10/196,533, filed on July 16, 2002, which is a continuation-in-part of U.S. Patent Application No. 10/142,298, filed on May 9, 2002.
  - 15. LivaNova has not obtained a license to the '307 Patent.
- 16. LivaNova does not have Neuro-Cardiac's permission to make, use, sell, offer to sell, or import products that are covered by one or more claims of the '307 Patent.
- 17. LivaNova needs to obtain a license to the '307 Patent and cease its ongoing infringement of Neuro-Cardiac's patent rights.
- 18. Plaintiff Neuro-Cardiac is the owner and assignee of all rights, title, and interest in and under the '307 Patent.
  - 19. Neuro-Cardiac has standing to sue for infringement of the '307 Patent.

# **GENERAL ALLEGATIONS**

# **Accused Product**

- 20. Upon information and belief, LivaNova makes, uses, sells, offers to sell, and/or imports into the United States a Vagus Nerve Stimulation ("VNS") Therapy System that is compatible with an implantable pulse generator known as the "SenTiva Generator" or "Model 1000" (hereinafter, "SenTiva" or "Model 1000").
- 21. The VNS Therapy System when used with the SenTiva is hereinafter referred to as the "Accused Product." Similarly, as used hereafter in this Complaint, the "VNS Therapy System" refers to the VNS Therapy System when used with the SenTiva Model 1000 implantable pulse generator.
- 22. LivaNova announced via a news release dated October 9, 2017, that it had received FDA approval for the "SenTiva Device and Next-Generation VNS Therapy Programming System

for Treatment of Epilepsy." The news release, which is available via LivaNova's website at investor.livanova.com/phoenix.zhtml?c=254127&p=irol-newsArticle&ID=2305354, states in part:

# LivaNova Receives FDA Approvals for SenTiva Device and Next-Generation VNS Therapy Programming System for Treatment of Epilepsy

London, Oct. 9, 2017 – LivaNova PLC (NASDAQ:LIVN) ("LivaNova" or the "Company"), a market-leading medical technology company, today announced it received U.S. Food and Drug Administration ("FDA") approvals for its latest Vagus Nerve Stimulation Therapy<sup>®</sup> ("VNS Therapy") System, which consists of the SenTiva<sup>TM</sup> implantable generator and the next-generation VNS Therapy Programming System for the treatment of patients with drug-resistant epilepsy. SenTiva is the smallest and lightest responsive therapy for epilepsy. The new VNS Therapy Programming System features a wireless wand and new user interface on a small tablet. Together, the components offer patients with drug-resistant epilepsy a physician-directed customizable therapy with smart technology and proven results to reduce the number of seizures, lessen the duration of seizures and enable a faster recovery.

23. Additionally, according to the News Release identified in paragraph 22 above, the SenTiva device provides new functionality to the VNS Therapy Programming System:

The VNS Therapy Programming System is compatible not only with SenTiva, but with all LivaNova legacy VNS Therapy generators, allowing physicians to use the system with numerous patients. When combined with SenTiva's technology, the new system provides several advanced options and personalized features, including:

- Guided programming Advanced technology allows physicians to quickly and confidently deliver treatment with one touch.
- Scheduled programming Physicians can safely program multiple therapeutic steps during one office visit; the generator will then gradually and automatically increase therapy without the need for the patient to return to the physician. Scheduled programming can be very helpful, since many patients with epilepsy are not able to drive. This feature may also allow the patient to achieve a therapeutic range sooner.
- Day and night programming Physicians have unrivaled flexibility to customize therapy when their patients need it at specific times, day or night.
- 24. The VNS Therapy System is a system for providing electrical pulses to a vagus nerve of a patient for treating or alleviating the symptoms of at least one of neurological, neuropsychiatric, and obesity disorders.
- 25. Section 1.1.1 of the VNS Therapy System Physician's Manual (U.S. Version, March 2018, *available for download at* https://us.livanova.cyberonics.com/healthcare-professionals/resources/product-training) (hereinafter, "**Physician's Manual**") states the following:

# 1.1.1 The VNS Therapy System

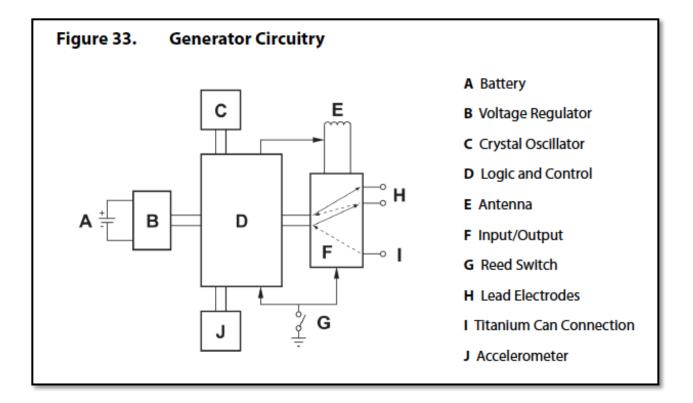
The LivaNova® VNS Therapy® System, used for vagus nerve stimulation (VNS), consists of the implantable VNS Therapy generator, lead, and external programming system used to change stimulation settings. The generator is an implantable, multiprogrammable pulse generator that delivers electrical signals to the vagus nerve. The generator is housed in a hermetically sealed titanium case and is powered by a single battery. Electrical signals are transmitted from the generator to the vagus nerve by the lead. The lead and the generator make up the implantable portion of the VNS Therapy System.

The VNS Therapy Programming System includes a computer pre-installed with VNS Therapy programming software and a programming wand. The physician uses the programming system to read and change generator settings.

- 26. The SenTiva is an implantable pulse generator comprising a microprocessor, circuitry, memory, and a power source.
- 27. The SenTiva uses complementary metal oxide semiconductor (CMOS) integrated circuits, including a microprocessor.
  - 28. 6.1.4 of the Physician's Manual states the following:

6.1.4	Circuitry				
		The generator uses complementary metal oxide semiconductor (CMOS) integrated circuits, including a microprocessor. The circuitry is functionally represented in Figure 33.			
	For descriptive purposes, circuitry of the generator can be divided into the following major functional sections:				
	Voltage regulators	Regulates the system power supplies			
	Crystal oscillator	Provides a timing reference			
	Logic and control	Controls overall generator function; receives and implements programming commands; collects and stores telemetry information, processes sensory input, and controls scheduled and sensory-based therapy outputs			
	Antenna	Receives programming signals; transmits telemetry information to the programming wand			
	Reed switch	Provides a mechanism to place the generator in Magnet Mode or to inhibit its output			
	Input/Output	Develops and modulates signals delivered to the lead; provides amplification of cardiac signals; allows the traditional VNS electrodes to serve as both therapy outputs and sensing input connections			
	Accelerometer	Provides information related to patient posture			

29. The circuitry of the SenTiva is functionally represented in Figure 33 from the Physician's Manual, which is reprinted below:



- 30. The SenTiva includes an internal memory.
- 31. The SenTiva includes a power source in the form of a Wilson Greatbatch Ltd.

  Model 2183 lithium carbon monofluoride battery with an open-circuit voltage of 3.3 V.
  - 32. Section 6.1.3 of the Physician's Manual states the following:

#### 6.1.3 Power Source

The power source for the Model 1000 generator is a Wilson Greatbatch Ltd, Model 2183, lithium carbon monofluoride battery with an open-circuit voltage of 3.3 V.

The battery's maximum available capacity is approximately 1 Amp-hour. The self-discharge reduces the capacity by less than 1 percent per year. The voltage in this battery gradually decreases as the battery nears its end of service (EOS).

- 33. The SenTiva includes at least two predetermined/pre-packaged programs of stimulation therapy stored in memory to control electrical pulses emitted by the SenTiva.
- 34. The SenTiva is capable of delivering two independent sets of therapy parameters at different times during a 24-hour period.

35. Section 6.3.3.6 of the Physician's Manual states:

# 6.3.3.6 Day-Night Programming



**Caution:** Time-based features (e.g., Scheduled Programming, Day-Night Programming) do not automatically adjust for Day Light Savings or time zone changes. Tell the patient to follow-up with the physician for reprogramming if needed.

Day-Night Programming is an optional feature that allows the generator to deliver 2 independent sets of therapy parameters at different times during a 24-hour period. The physician specifies what parameters will change, and a time period during the 24-hours when the alternate parameter set should be active. After the Day-Night program has been defined, the generator will alternate between the 2 independent parameter sets on a daily basis. This feature provides the physician the ability to further customize the delivery of VNS Therapy to accommodate to each individual patient's needs after a target level has been established for the patient.

As with any therapy setting change, the risk and benefits of altering a patient's known efficacious settings should be considered when making adjustments. Inform your patients about when to expect a setting change (i.e. when Daytime settings transition into Nighttime settings). In addition, patient tolerability of the alternate parameter set should be assessed prior to the patient leaving the office visit.



**Note:** For additional information on use of the feature, refer to the programming system physician's manuals.

- 36. The SenTiva also includes a pre-programmed mode referred to as the "Standard Mode."
- 37. LivaNova's website states, at https://us.livanova.cyberonics.com/learn-more/how-it-works:

# The 3 modes of VNS Therapy explained



#### **Standard Mode**

Prevention Delivery

Therapy is delivered at regular intervals throughout the day in an effort to stop seizures before they start.



#### **Detect & Respond\***

Responsive Delivery

Responsive automatic delivery of an extra dose of therapy (when a rapid increase in heart rate is detected that may be associated with seizures) in an effort to stop a seizure once it starts.



# **Magnet Mode**

On-Demand Delivery

Provides you or a caregiver the ability to manually deliver an additional dose of therapy in an effort to stop a seizure once it starts.

\*Also known as AutoStim Mode. Only available in the 106 model.

- 38. The SenTiva may be programmed to set neuromodulation parameters.
- 39. The SenTiva may be programmed to set pulse amplitude.
- 40. The SenTiva may be programmed to set pulse width.
- 41. The SenTiva may be programmed to set pulse frequency.
- 42. The SenTiva may be programmed to set pulse on time.
- 43. The SenTiva may be programmed to set pulse off time.
- 44. Section 6.3.4.1 of the Physician's Manual states:

# 6.3.4.1 Programmable parameters

A graphic representation of stimulation (Figure 37) depicts the relationship of the programmable parameters. Each parameter can be independently programmed, thereby

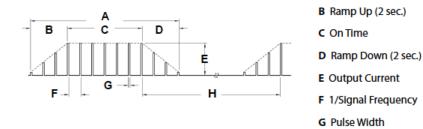
offering multiple setting combinations from which the physician may select optimal stimulation for the patient.

Figure 37 shows that the output pulse can be varied both by amplitude (output current) and duration (pulse width). The number of output pulses delivered per second determines the frequency.

A Stimulation Time

**H** Off Time

Figure 37. Stimulation (Frequencies < 10 Hz do not ramp)



- 45. The VNS Therapy System includes an implantable lead in electrical contact with the SenTiva.
  - 46. Section 7.1.1 of the Physician's Manual states:

# 7.1.1 Description

The VNS Therapy Model 302, PerenniaDURA\* Model 303, and PerenniaFLEX\* Model 304 (where available) Leads are bifurcated at one end and have a single connector pin at the other end, as shown in Figure 42 and Figure 43.

The lead, which delivers the electrical signal from the generator to the vagus nerve, is insulated with silicone. It is available in two sizes (2.0 and 3.0 mm electrode inner diameter) to ensure optimal electrode fit on different size nerves. The lead has two helical electrodes and an anchor tether, which are coiled around the left vagus nerve. The connector end of the lead is tunneled subcutaneously to the generator pocket.

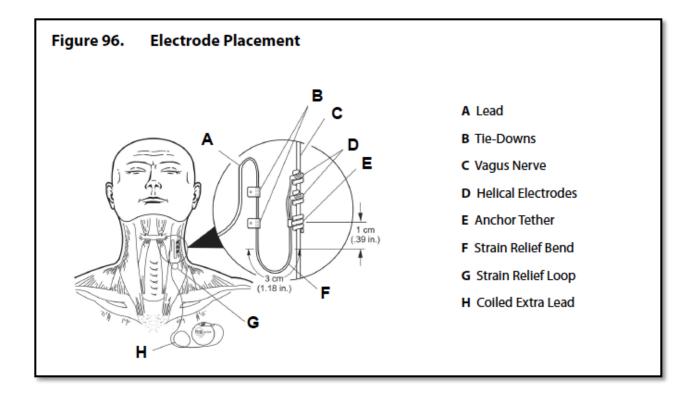
- 47. The VNS Therapy System uses leads that are insulated with silicone.
- 48. Table 20 in Section 7.2 of the Physician's Manual identifies the insulation for lead models 302, 303, and 304 as Silicone:

Lead Body					
Diameter	2 mm (0.08 in)				
Insulation	Silicone*				
Conductor coil construction	Helical, quadfilar	Helical, trifilar	Helical, quadfilar		
Conductor material	MP-35N alloy				
Overall length	43 cm (17 in)				
Lead resistance (connector pin/ ring to electrode)	120 to 180 Ohms	180 to 250 Ohms	120 to 180 Ohms		

- 49. The electrode of the implanted lead in the VNS Therapy System comprises platinum/iridium alloy.
- 50. Table 20 in Section 7.2 of the Physician's Manual identifies the conductor material for lead models 302, 303, and 304 as Platinum/Iridium alloy:

Electrodes and Anchor Tether		
Helical material	Silicone elastomer*	
Conductor material	Platinum/Iridium alloy	
Separation	8 mm (0.31 in) center to center	
Suture material	Polyester	

- 51. The electrodes used in the VNS Therapy System are helical electrodes.
- 52. Figure 96 in Section 12.5 of the Physician's Manual identifies the helical electrodes as element D:



- 53. The electrode of the VNS Therapy System is adapted to be in contact with the vagus nerve of a patient.
- 54. Section 12.6.3 of the Physician's Manual includes instructions on how to place the electrode of the VNS Therapy System around the left vagus nerve of a patient.
  - 55. Section 12.6.3.1 of the Physician's Manual states:

## 12.6.3.1 Anatomy

It is very important that the surgeon implanting the VNS Therapy System be familiar with vagus nerve anatomy, particularly the cardiac branches. The lead electrodes must not be placed on either the superior or the inferior cervical cardiac branches. Place the lead below where the superior and inferior cardiac branches separate from the vagus nerve. Stimulation of either of these two branches during the System Diagnostics (Lead Test) may cause bradycardia and/or asystole. Careful dissection laterally on the vagus nerve should aid the physician in determining proper electrode placement. In most but not all patients, the main vagus nerve is the largest of the three nerves. Figure 98 shows the correct anatomical placement of the helices.



**Caution:** Attachment of lead electrodes must not involve the superior cervical cardiac branch or the Inferior cervical cardiac branch of the vagus nerve. Place the electrodes *below* where these two branches separate from the vagus nerve.

- 56. The VNS Therapy System includes a means for activating and/or programming the SenTiva using bi-directional inductive telemetry to exchange data with the SenTiva.
  - 57. Section 6.3.2.2 of the Physician's Manual states:

#### 6.3.2.2 Communication

The generator "listens" for a communication signal from the programming wand. Communication usually initiates between 1 and 4 seconds, but may be prolonged or interrupted in the presence of electromagnetic interference (EMI). Depending on the type and amount of information being transferred between the generator and the programming wand, complete communication may take up to one minute. Downloading additional information may take more time.

The generator listens for and implements interrogations, parameter programming instructions, requests for diagnostics testing, and device history inquiries. In response, the generator transmits information on the stimulation parameter settings, changes its parameter settings, responds to requests for diagnostics testing, and provides device histories, respectively. Each time these data are transmitted by the generator, they are saved by the programming software to a database.

Note: For details on viewing generator information on a programming computer, see the programming system physician's manuals.

In addition to the programming system, a magnet can be used for one-way communication to the generator by activating a reed switch in the electronic circuitry. The magnet can be used to initiate stimulation, temporarily inhibit stimulation, perform Magnet Mode diagnostics, or reset the generator.

- 58. Further discovery may reveal additional infringing products and/or models.
- 59. Upon information and belief, the Accused Product is offered for sale and sold within the Southern District of Texas.
- 60. LivaNova has infringed and continues to infringe (literally and/or under the doctrine of equivalents), directly, indirectly, and/or through subsidiaries, agents, representatives, or intermediaries, one or more claims of the '307 Patent including at least Claims 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 18, 19, 21, 22, 23, 25, 26, 27, and 28 of the '307 Patent by making, using, importing, testing, supplying, causing to be supplied, selling, and/or offering for sale in the United States the VNS Therapy System.

- 61. LivaNova induces its customers' infringement of the '307 Patent under 35 U.S.C. § 271(b).
- 62. LivaNova customers have infringed and continue to infringe the '307 Patent by using the VNS Therapy System purchased from LivaNova. Through its product manuals and/or sales and marketing activities, LivaNova solicits, instructs, encourages, and aids and abets its customers to purchase and use the VNS Therapy System with the SenTiva implantable pulse generator.
- 63. On information and belief, LivaNova's actions have been with specific intent to cause infringement or LivaNova has been willfully blind to the resulting infringement because LivaNova has had actual knowledge of the '307 Patent and knowledge that its acts were inducing infringement of the '307 Patent since before the filing of this action.
- 64. LivaNova contributes to infringement of the '307 Patent under 35 U.S.C. § 271(c) by selling components of an infringing system (*e.g.*, the SenTiva implantable pulse generator). The SenTiva is not a staple article or commodity of commerce suitable for substantial noninfringing uses. For example, the SenTiva is an implantable pulse generator used in the overall VNS Therapy System and is designed in such a way that it contributes to the infringement of at least one claim of the '307 Patent.
  - 65. LivaNova's direct and indirect infringement of the '307 Patent has been willful.

# LivaNova's Knowledge of the '307 Patent

- 66. On information and belief, LivaNova and/or its predecessor Cyberonics, Inc. ("Cyberonics") has known about the '307 Patent since at least April 30, 2010.
  - 67. LivaNova had knowledge of the '307 Patent before the filing of this action.
- 68. Despite its knowledge of the '307 Patent, LivaNova has made, used, sold, offered for sale, and/or imported into the United States products covered by one or more claims of the '307

Patent, including the Sentiva. LivaNova infringement of the '307 Patent has been willful and intentional because it has continued its acts of infringement with knowledge of the '307 Patent and despite an objectively high likelihood its actions constituted infringement of a valid patent.

- 69. On April 30, 2010, U.S. Patent Application No. 12/772,010, which ultimately issued as United States Patent No. 8,594,806, was filed at the United States Patent & Trademark Office. An Information Disclosure Statement filed on July 14, 2013 identified the '307 Patent.
- 70. On August 23, 2012, U.S. Patent Application No. 13/593,178, which ultimately issued as United States Patent No. 9,343,923, was filed at the United States Patent & Trademark Office. An Information Disclosure Statement filed with the original application identified the '307 Patent.
- 71. In addition to the instances above, LivaNova has knowledge of the '307 Patent as of the filing of this lawsuit, and its ongoing infringement is willful.
- 72. Neuro-Cardiac has been and continues to be damaged as a result of LivaNova's infringing conduct. LivaNova is therefore liable to Neuro-Cardiac in an amount that adequately compensates Neuro-Cardiac for LivaNova's infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.
- 73. LivaNova markets and sells other products that are not covered by the claims of the '307 Patent but that are sold with or in conjunction with the Accused Products. Accordingly, Neuro-Cardiac is entitled to collect damages from LivaNova for convoyed sales of certain non-patented items.
- 74. LivaNova failed to obtain permission from Neuro-Cardiac to make, use, sell, offer to sell, or import products incorporating the inventions claimed in the '307 Patent.

75. For each count of infringement listed below, Neuro-Cardiac incorporates and restates the allegations contained in the preceding paragraphs above including these General Allegations as if fully set forth in each count of infringement.

# **Count I – INFRINGEMENT OF THE '307 PATENT**

- 76. LivaNova has been and is now directly infringing the '307 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States products that are covered by at least Claims 1, 2, 3, 5, 6, 7, 8, 10, 11, 12, 18, 19, 21, 22, 23, 25, 26, 27, and 28 of the '307 Patent, including but not limited to the Accused Product. LivaNova's direct infringement of the '307 Patent is willful.
- 77. In addition, LivaNova has been and is now indirectly infringing the '307 Patent in violation of 35 U.S.C. § 271(b) by actively inducing its customers to directly infringe the '307 Patent. For example, LivaNova sells the Accused Product to its customers for the express purpose of having its customers use the Accused Product in violation of 35 U.S.C. § 271(a). Additionally, LivaNova instructs its customers how to use the Accused Product in an infringing way via its website and instruction manuals. LivaNova solicits, instructs, aids and abets, and encourages its customers to purchase and use the Accused Product. LivaNova's inducement of infringement of the '307 Patent is willful.
- 78. On information and belief, LivaNova has known about the '307 Patent since before the filing of this action. LivaNova acted despite an objectively high likelihood that its actions constituted infringement of a valid patent. LivaNova was aware that its actions would cause infringement of the '307 Patent and acted with intent to encourage direct infringement of the '307 Patent.

79. As a result of LivaNova's infringement of the '307 Patent, Neuro-Cardiac has suffered and is owed monetary damages that are adequate to compensate it for the infringement under 35 U.S.C. § 284, but in no event less than a reasonable royalty.

## **DEMAND FOR A JURY TRIAL**

80. Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Neuro-Cardiac demands a trial by jury on all issues triable of right by a jury.

# PRAYER FOR RELIEF

- 81. WHEREFORE, Neuro-Cardiac respectfully requests that this Court enter judgment in its favor and grant the following relief:
- 82. A judgment that LivaNova has directly infringed one or more claims of the '307 Patent;
- 83. A judgment that LivaNova has indirectly infringed one or more claims of the '307 Patent;
  - 84. A judgment that LivaNova's infringement of the '307 Patent has been willful.
- 85. A judgment and order requiring LivaNova to pay Neuro-Cardiac past and future damages under 35 U.S.C. § 284, including for supplemental damages arising from any continuing post-verdict infringement for the time between trial and entry of the final judgment with an accounting, as needed, as provided by 35 U.S.C. § 284;
- 86. A judgment and order finding that this is an exceptional case and awarding Neuro-Cardiac its reasonable attorneys' fees pursuant to 35 U.S.C. § 285;
- 87. A judgment and order requiring LivaNova to pay Neuro-Cardiac reasonable ongoing royalties on a going-forward basis after final judgment;

- 88. A judgment and order requiring LivaNova to pay Neuro-Cardiac pre-judgment and post-judgment interest on the damages award;
  - 89. A judgment and order requiring LivaNova to pay Neuro-Cardiac's costs; and
  - 90. Such other and further relief as the Court may deem just and proper.

Dated: May 11, 2018

Respectfully submitted,

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